

Adult obesity: Is childhood sugar intake in the '70s to blame?



Written by [Ana Sandoiu](#) on September 25, 2019 — [Fact checked](#) by Jasmin Collier

Is today's adult obesity epidemic the result of children in the 1970s and 1980s consuming excessive amounts of sugar? New research uses a mathematical model to find the answer.



A study might have found the cause of today's high adult obesity rates.

In recent years, [obesity](#) rates in the United States have skyrocketed.

To be specific, around 15% of adults had obesity in 1970. By 2016, that percentage had increased to [almost 40%](#) .

Numerous studies have linked the rise in sugar intake with obesity, and many researchers believe that consuming artificially sweetened

beverages and processed foods contribute to the obesity epidemic.

However, if this is the case, why did obesity rates continue to rise even after sugar consumption began to decline? In 2014, for instance, obesity rates continued to climb despite the fact that sugar intake among U.S. adults had dropped by 25%.

These are some of the questions that researcher Alex Bentley and his colleagues set out to answer in a new study. Their results appear in the journal [*Economics & Human Biology*](#).

Bentley, head of the Department of Anthropology at the University of Tennessee at Knoxville, and team posit that today's adult obesity epidemic is the result of increases in childhood sugar intake that occurred decades ago.

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Dietary habits from 30–40 years ago are key

“While most public health studies focus on current behaviors and diets, we took a novel approach and looked at how the diets we consumed in our childhood affect obesity levels now that we are adults,” says Bentley.

Study co-author Damian Ruck, a postdoctoral research fellow in the Department of Anthropology, adds, “Up to this point, no studies have explicitly explored the temporal delay between increased sugar consumption and rising obesity rates.”

To fill this gap, Bentley and team devised a mathematical model for the increase in adult obesity rates since the 1990s “as a legacy of increased consumption of excess sugars among children of the 1970s and 1980s.”

They then tested their model using data that the Centers for Disease Control and Prevention (CDC) had gathered in 1990–2004, and by comparing them with U.S. Department of Agriculture data on annual sugar intake since 1970.

Using a [stochastic process](#), the model shows how the rising consumption of excess sugar increased obesity rates in each age cohort.

“Our results indicate that past U.S. sugar consumption is at least sufficient to explain adult obesity change in the past 30 years,” say the researchers.

Their model, they say, explains the years of delay between sugar consumption (cause) and increasing obesity rates (effect).

“Our results suggest that the dietary habits learned by children 30 or 40 years ago could explain the adult obesity crisis that emerged years later.”

– *Damian Ruck*

More specifically, the model suggests that “for each age cohort, [...] the current obesity rate will be the obesity rate in the previous year plus a simple function of the mean excess sugar consumed in the current year.”

“With just these inputs,” the researchers add, “the model can replicate the timing and magnitude of the national rise in obesity.”

Poverty main driver of excess sugar intake

The study’s other significant observations include the importance of the rise in consumption of high fructose corn syrup. Most of the increase in

excess sugar consumption before 2000 was due to this artificial sweetener, which had become very prevalent in processed foods and soft drinks.

“Because 75-year-old [people] experienced childhood before the large-scale increase of sugar in processed foods, they may have developed less lifelong preference for added sugars in foods,” write the study authors. However, they add that more research is necessary in this age group.

They also speculate that poverty is the main driver behind excessive sugar consumption.

“Economically, sugar is an inexpensive source of [calories](#), and sweetened beverages have been a substantial portion of expenditures for low income households,” they say.

Finally, they note that childhood obesity rates have dropped since the Special Supplemental Nutrition Program for Women, Infants, and Children [halved the daily juice allowance in 2009](#) .

“If our model is correct, the effect of this 2009 change will follow these children into adulthood,” conclude Bentley and colleagues.

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